

Y-12 BULLETIN

A NEWSPAPER BY AND FOR EMPLOYEES OF CARBIDE AND CARBON CHEMICALS CORPORATION IN Y-12

Volume 3, No. 31

OAK RIDGE, TENNESSEE

Tuesday, August 16, 1949

Materials Lab Group Performing Research On Metals Diffusion

Determining the rate of diffusion of metal atoms of one element into or between those of another element is one of the interesting research problems in which the Materials Laboratory is now engaged. The specific purpose of this investigation is that of establishing the different rates of diffusion among various stable isotopes.

A unit of the Isotope Research and Production Division, this materials group is concerned for the most part with research, uses and tests involving metals, ceramics, plastics, and protective coatings. Situated in Building 9766, it operates under the general direction of Dr. C. P. Keim and under the direct supervision of Paul J. Hagelston.

Theory states that the isotopes of an element diffuse at rates inversely proportional to the square roots of their masses. In the case of the element nickel, there is approximately 10 per cent mass difference between its isotope of mass weight 58 and that of mass weight 64. Hence, the different diffusion rates of these isotopes into elemental iron should be measurable.

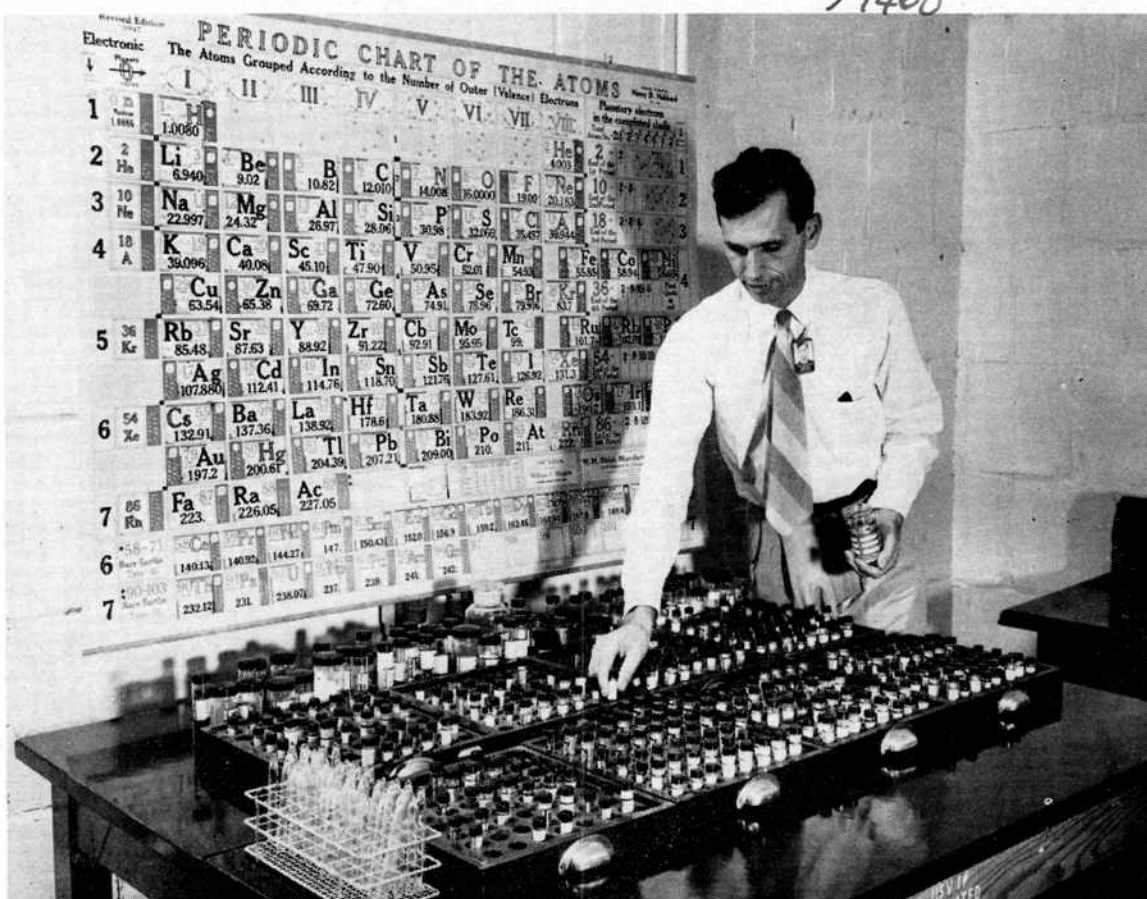
For the experimental work of the project, small rods of elemental iron and wafers of both elemental and isotopic nickel will be prepared by powder metallurgical methods and an intimate bond formed between the nickel and iron by resistance welding. Each composite piece will be heat-treated under carefully controlled conditions for specific periods of time. After selective sampling, the distance and amount of diffusion of the nickel atoms into the iron will be measured by chemical and mass analyses, X-ray diffraction study, and photomicrography. Various isotopes of nickel can be compared and their differences in diffusion rates computed.

Close Control Required

Such a problem, stated in the form of its ultimate intent—as given above, may sound relatively straightforward despite the extreme care and close control required throughout. However, in order to get to the starting point many other operations are necessary. The pure iron pellets and the nickel wafers must be fabricated by powder metallurgical methods, entailing die design and construction and setting up of a suitable hydrogen furnace for sintering the packed powder. Too, the pellets must attain virtual theoretical density for iron, which means that the details for sintering must be carefully considered.

The working of the isotopic nickel wafers presents many difficulties.

(Continued On Page 2)



Y-12'S PEACETIME PRODUCT—THE PHOTOGRAPH SHOWS BOYD WEAVER, SUPERVISOR of Isotope Chemistry and Shipments, removing a vial containing a stable isotope from the store of these products, which are distributed throughout the nation for use in scientific research.

AEC Requests Notification On Trips Outside U.S.A.

The Atomic Energy Commission has requested that they be notified of trips outside the continental United States, vacations or otherwise, planned by persons who now have or have in the past had access to classified information. Employees of Y-12 who plan to make such trips should inform their supervisor who will transmit the information through channels to the Y-12 Security Office.

Information furnished should include the name, badge number, department number and job title of the person planning the trip, and some indication of the length of service with the Atomic Energy Commission, and the type classified information to which they have had access.

Information should also be furnished as to the country the employee plans to visit, the purpose of the visit, why, when and how long the visit is planned, named of individuals or institutions to be contacted and whether or not a passport has been issued.

Carbide Camera Club Plans Festive Affair For Its September 13 Annual Print Salon

Cash awards and distribution of ribbons will be made at the Carbide Camera Club headquarters at the East Portal, Y-12, September 13, to the winners in the club's annual print salon. Members of the club and their families look forward to a festive evening. A total of \$50 in prize money plus ribbons for the first three winners in each class will be distributed to winning entries.

Any Carbide Camera Club member in good standing may compete. Entries must be submitted to Nat Stetson or Taylor's by Tuesday, September 6, 1949. Entries are limited to four in each class and may consist of any picture taken after September 1947 not entered in a previous annual salon. All prints and slides must be marked on the back of the mount with the name of the member and the class in which it is entered.

Joe Culver's Son Wins At Model Plane Meet

Competing in the National Model Airplane Contest sponsored by the Academy of Model Aeronautics, young Dick Culver, in competition with one thousand model plane enthusiasts, won a first place trophy in the carbon-dioxide, powered free-flight event. In addition, Dick placed eighth in the indoor, hand-launched event and tenth in the outdoor, tow-launched glider class.

Dick, son of Joe Culver, Dept. 2064, attended the meet held at Olathe, Kansas, at the site of the Naval Base, accompanied by his parents. His Daddy placed third in the gas-engine powered, free-flight event.

While in Kansas, Dick celebrated his twelfth birthday. He claims the trophies he received were the finest birthday presents he could ever expect to obtain.

There are four classes for black and white prints and color transparencies:

A. BABIES and CHILDREN—One or more youngsters to be judged for cuteness, expression of character or mood. Subjects may be engaged in appropriate activities or interests. Adults may appear if they are not the principal interest.

B. YOUNG PEOPLE and ADULTS—One or more people (high school age or older) engaged in any activity, at home or at work, indoors or out.

C. SCENES and STILL LIFE—Pictures to be judged for scenic or pictorial appeal; landscapes, marine views, etc. Still life subjects including table-top or miniature arrangements.

D. ANIMAL LIFE—Household pets, farm animals, wild life, zoo pictures. Indoor or out.

Winning Prints Of UCC Contest Arriving Soon

The seven winning prints selected from entries in the recent Corporation-wide print contest are being sent to Oak Ridge for display, according to a schedule transmitted by the president of the UCC Camera Club.

Since the prize-winning prints are being sent to many units of the corporation, they can be displayed

in Oak Ridge for a limited time only. The present schedule calls for them remaining in Oak Ridge from September 19-23.

Officers of the local Carbide Camera Club are now making plans for displaying the prints in locations available to the largest number of employees, their families and friends.

Stable Isotopes Produced In Y-12 Extensively Used

In the office of the Isotope Chemistry Section in Building 9211 there is the world's largest collection of stable isotopes. Isotopes of each element differ only in their atomic weights and the number of neutrons in their atoms. About 550 vials and bottles contain remnants of the productive activities of the Isotope Research and Production Division since November, 1945. The isotopes of 35 chemical elements have been successfully concentrated and made available for distribution throughout the nation to institutions engaged in scientific research.

From the beginning of the stable isotope program its products were shipped to various installations within the Manhattan District. Oak Ridge National Laboratory has been the largest user of isotopes, since the nuclear reactor there makes it possible to bombard atoms with neutrons and produce radioactive isotopes, the nuclear properties of which can then be studied by the modern techniques of radiochemistry. The neutron absorption cross sections of most isotopes will also eventually be determined there. Programs have been planned for extensive studies of neutron diffraction and scattering. At other project installations there are cyclotrons, betatrons and Van de Graaf generators, all of which have been applied to the study of isotopes produced in Y-12. Some 415 samples of isotopes have been distributed within the project.

Distribution Extended

In January 1948, the Atomic Energy Commission extended the distribution of stable isotopes to universities and other research institutions throughout the nation. Since that time 171 individual shipments have been made to such users. July, 1949, was a record month with a total of 40 shipments going to educational institutions. Most of these went to Dr. Enrico Fermi, famous nuclear physicist and Nobel prize winner, who will study nuclear resonances and new activities at the University of Chicago. Dr. M. L. Pool at Ohio State University has made significant contributions to scientific literature through the study of isotopes and continues to request more. Dr. J. E. Mack of the University of Wisconsin has under way an extensive program of investigations of isotopic differences in atomic spectra.

Used By Universities

Another quantity user is Dr. B. B. Duffield of the University of Illinois, who studies activities produced by X-ray bombardment of the isotopes of various elements. The most distant shipments have been to Washington State College at Pullman, Washington. The most recent recipient of Y-12 isotopes is Indiana University. Other educational institutions include the University of Pennsylvania, Princeton, (Continued On Page 2)

SAFETY SCOREBOARD

Your Plant Has

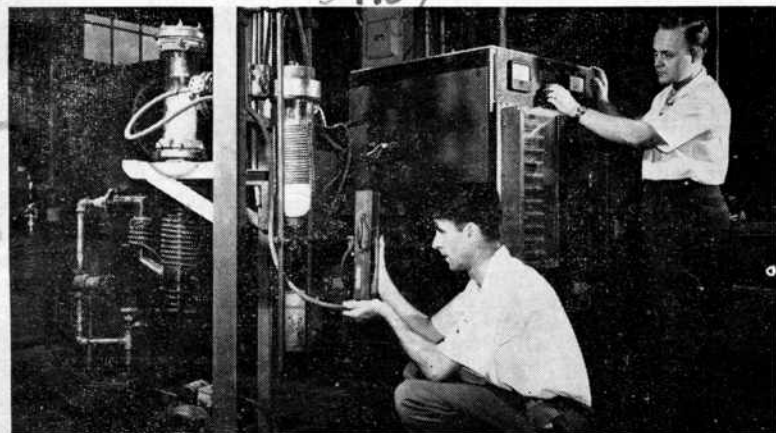
Operated

50 DAYS

Without A Lost Time

Accident

THROUGH AUG. 11



DESIGNED AND FABRICATED BY MATERIALS LAB personnel, this high vacuum, high temperature induction furnace is used for heat treating of various ceramics and metals. In the picture, R. O. Hutchison, right, is shown regulating the power supply, and E. J. Hagelston is checking the vacuum reading.

Dr. Enrico Fermi Quantity User Of Y-12 Isotopes

(Continued from Page 1)

Yale, Harvard, Notre Dame, Columbia, University of Michigan, Rice Institute, Massachusetts Institute of Technology, Johns Hopkins University, Northwestern University, University of Southern California, Carnegie Institute of Technology, and Purdue University. Customers among industries and institutions are General Electric Corporation, Bartol Research Foundation and Presbyterian Hospital.

While there has been a demand for isotopes of all elements, the greatest interest is apparently in potassium 40, which is radioactive and makes up about 0.01 per cent of all potassium in nature. Since it has a half-life of more than 100 million years, the nature of its radioactivity is very difficult to study. Enrichments of this isotope at Y-12 has enabled investigators in several locations to study its half-life, decay scheme and radiation energy distribution. Future separations are expected to extend their knowledge. Facts from these studies are especially interesting to those doing research in the life history of the earth.

A very wide field of application which has hardly been touched is that of stable tracers. There will be a great demand for this purpose when mass analyzers have become readily available at reasonable expense. By this time the distribution of isotopes will have contributed to unraveling the mysteries of nuclear structure and will have become a useful tool in the study of chemical and physical reactions.

BIRTHS

Four births were reported at the Oak Ridge Hospital to Y-12 families recently. Parents were Mr. and Mrs. Frank Yodzukinas, a daughter, August 4; Mr. and Mrs. Ernest D. Hawk, a daughter, August 6; Mr. and Mrs. Clessie L. Bratcher, twin daughters, August 7; Mr. and Mrs. V. C. Jackson, a son, August 8.

Let's Keep George In Business



Reprinted from the International Correspondence School Publication, "Trained Men"

Cigarettes, hamburger, waffles, franks, ice cream, coffee!

Just imagine all this and more, at George's place. George's place is as typically American as ham and eggs. It doesn't offer much in the way of style. You drive up and park any place you find room; you join the crowd on stools at a high counter, and George himself is probably the fellow who's tossing them up over there at the hot plate. You'll find the food good and plentiful—prices right. George wants to make a living and he's willing for the other fellow to have a chance to do likewise.

You don't have to go far, nor try hard to find George's place. Travel where you will—North, East, South, West—and you'll find hundreds and hundreds of places just like this everywhere.

Cigarettes, hamburger, waffles, ice cream. So what! You can get them anywhere. Oh, yeah?

Just suppose it were possible for you to invite a guest from Poland, one of the Balkan countries, China, Russia, to take a trip with you in your car. Drive by George's place and tell him, nonchalantly, "Oh, you can get those things anywhere." "Oh, yeah?" He may not say it, but we'll just bet you that he'll look it. Then you go on and pass dozens and dozens of places like the one George has. Food aplenty, ice cream, all the cigarettes you want. Nobody demanding stamps, or identification cards if you want to buy. No black market

"deals" to go through. "There must be a catch in it somewhere," he is thinking. "So you can get it anywhere, can you, Mister?"

Can it be possible that we are taking all the Georges a little too much for granted? Bleak would be the dawn tomorrow if all the "George's places" went out of business tonight.

Yet, there are among us—in our factories, communities, in our schools and institutions, in high and responsible places, those who would change all this. They would "socialize" our institutions. They would have all business, all production, medicine, insurance, railroads, utilities, schools—everything—owned and operated by government. You, Mister, would be told what to do. Your pay would be set—and you wouldn't have anything to say about it. You'd be TOLD—and you could go along or else. Even George's place would no longer be George's.

"Absurd" our communistic acquaintance snorts. "Never heard such drooling nonsense!"

And I say, "O.K. If it's nonsense, just tell me where I'll find just one highway lined with places like George's—all the food you want, cigarettes, ice cream, ready to serve, and red hots comin' up fast—in any of your communistic countries."

Materials Lab Group Performing Research On Metals Diffusion

(Continued from Page 1)

culties by no means the least of which is that of assuring minimum loss of scarce isotopic material. Again, the iron and the nickel to be used must be in the pure metal powder form. This means that there must be close cooperation with Boyd S. Weaver's Isotope Chemistry group, from which must come these basic materials. Methods for attaching the nickel wafers to the iron pellets must be worked out, as must be methods concerned with ultimate sampling of the heat-treated composite.

Cooperation Essential

The analyses—mass, chemical, and X-ray—must necessarily be done in concert with the experts in each of the lines, the selective sampling by those versed in precision lathe work, and so on. In fact, the entire problem re-establishes the truism that any such research requires the concerted effort and cooperation of many people and also many skills.

Ralph O. Hutchison, of the Materials Laboratory, who is handling this diffusion research, has made a comprehensive literature study of the work done in the field and of the problems entailed and abstracts prepared concerning the more important articles published on the subject. These abstracts are contained in recently issued Report "Y-451." Such a survey, prior to instituting the actual experimental work, is a vital part of the overall problem.

It has been predicted that even small differences in the diffusion rates of isotopes will prove to be a powerful weapon in further research in metals industries, shedding needed light on the phenomena and mechanism of nitridization and carburization of steels, tool and die making, and catalysis.

Mighty few things happen to us that turn out as bad as we think they are.



Katherine Jenkins, Dept. 2046, is visiting with Josephine Barts, the former Josephine Mates, an ex-Y-12 employee, in Morehead City, N. C. . . . Helen Burkhalter and her husband made a week-end trip in their new Oldsmobile to Rome, Ga. to visit with relatives . . . Dept. 2046 welcomes Ruby Ison into their group . . . Helen Brown and her husband and some visiting relatives from Nashville and Murfreesboro, Tenn. spent a recent vacation in Fontana, N. C.

The other night out at the Oak Ridge Golf and Country Club our stalwart Recreation Director, Arnold Tiller, was looking for someone to play a golf match with. He spied Harold Ratjen and said "Got a match Ratjen?" "No, but I've got a lighter" was Ratjen's spicy reply.

Evan Means, Dept. 2077, Jim Morehead, Dept. 2282, and Charles Kasperek, Dept. 2002, are probably nursing blistered hands after putting in a water line at the Oak Ridge Sportsman's Club recently. By the way all you sportsman fans Morehead and Kasperek are building a barbecue pit at the club house which will soon be ready for use . . . George Schaeffer, Dept. 2077, is on the vacation list . . . J. R. Carriger is back on the job after a vacation trip to Elizabethton, Tenn. . . . W. L. Alspaugh was in Myrtle Beach, S. C. while on vacation.

S. D. White, Dept. 2015, spent a quiet vacation at her home in Oliver Springs . . . C. M. Neal vacationed on his farm near Leinarts, Tenn. . . . J. D. Goodpasture is spending his vacation visiting points of interest in Virginia . . . B. B. Foster is spending his vacation just loafing around home in Oak Ridge . . . F. B. Eubanks traveled down Mobile, Ala. way to spend his vacation . . . Get well wishes are extended to J. H. McCulley, D. R. Caryl and E. F. Dykes who are on the sick list.

During their vacation Janet Goggin, Dept. 2090, and her husband, John, Dept. 2619, traveled to New York by train and sailed from there via the Queen of Bermuda to Bermuda on a delayed honeymoon trip.

C. A. McAllister, Dept. 2096, has as summer visitors his nephews, David and Ralph Johnson of McDonald, Tenn. . . . Flossy McGhee is vacationing at her home in Briceville, Tenn.

H. R. Floyd, Dept. 2619, was in Sieverville while on vacation . . . H. W. Grabb is on the vacation list this week . . . Lizzie J. Willis plans to take in the mountain breeze in the Smokies during her vacation.

V. C. Jackson, Dept. 2282, has joined the "Proud Papa Club." The youngster was named Kenneth Allen and weighed six pounds and 13 ounces, born August 9 . . . John Dinsmore, Dept. 2617, and his wife, Marie, Dept. 2282 went to Asheville, N. C. during their vacation and while there visited the Biltmore Estate . . . Daisy Ward had as recent guests her sisters, Mrs. Bernie Guley, of Louisville, Ky., and Mrs. Isaac Robbins, of Middlesboro, Ky.

On the morning of August 7 the stork left not one but two bouncing baby girls to C. L. Bratcher, Dept. 2133, and his wife. The twins were named Sharon and Karon and weighed four pounds and 12 ounces and four pounds and 15 and one-half ounces . . . Leon Brown made a vacation trip to Atlantic City . . . Betty Greene and her husband were in Virginia last week visiting with her parents . . . Bill Plemons is spending most of his vacation time moving into the Plemons' new residence in Harriman, Tenn. . . . Lou Carter made a week-end trip to Waynesboro, Tenn. . . . We are happy to see Yale Payne back on the job after an extended illness.

E. M. Hunnicut, Dept. 2091, and his family plan to visit in Greenville, S. C. and points of interest in Florida while on vacation . . . S. E. Murphy made a vacation trip to Dallas, Texas . . . W. H. Denton is resting at his home in Sweetwater. M. N. Wilkerson is vacationing with home folks in Lenoir City, Tenn.

Deepest sympathy is extended to H. F. Eubanks, Dept. 2143, in the death of his brother and father which occurred August 6 . . . Lloyd

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Acres is vacationing in Oneida, Tenn.

Hubert Green, Dept. 2008, is the proud papa of a baby boy, J. P., weighing 12 pounds, born August 5 . . . T. D. Bosler and A. G. Stooksbury are on the vacation list.

Mona Blake, Dept. 2283, spent last week taking life easy at her home in Oak Dale, Tenn. . . . Juanita Hendon is visiting with relatives in Birmingham, Ala. . . . Mae Engle plans to travel down Alabama way during her vacation . . . Dora Whaley is taking in the ocean breeze at Daytona, Fla., during her vacation. J. E. Parham is vacationing at his home in Norris.

Vacationers in Dept. 2014 are Oscar Smith, N. Williams and M. D. Varnadore.

Paul Blakely, Dept. 2300, and his wife plan to visit all the high spots in Chicago while on vacation.

Al Stephens, Dept. 2282, and his family visited in Cincinnati and Chattanooga during their vacation. Emil Dittman and his family made a Sunday tour through the Smokies with some visiting friends from North and South Dakota.

We would like to reinstate ourselves—instead of H. J. Finger, Dept. 2015, and his family going to Newport they spent their vacation at Norfolk and Virginia Beach, Va. While there they had the honor of visiting the famous battleship "The Missouri" escorted by their brother-in-law, Lt. Comdr. Jack J. Jones.

E. E. Green and C. B. Hopkins, Dept. 2014, and A. V. Kendig, Dept. 2008, attended a State Tournament baseball game between the Fulton team of Knoxville and Sandy Moore team of Nashville in Crossville last week.

Jesse A. Griffin, Dept. 2360, and his family are spending their vacation on the Griffin's farm in Middle Tennessee . . . Kenneth Allen spent last week visiting with home folks in New Hampshire . . . Bob Bailey visited with relatives in Maryville during his vacation . . . Jack Lockwood, former Y-12 employee, now with the Physics Department at the University of New Hampshire, paid a recent visit to friends in Oak Ridge while attending a session at MIT in Oak Ridge.



LEYSON-LORD

Mrs. Arther E. Lord, of Plano, Illinois, announces the engagement of her daughter, Miss Emily Lord, Dept. 2300, to William Leyshon, Dept. 2360, son of Mr. and Mrs. John W. Leyshon of North Wilkesboro, North Carolina.

The wedding will take place in Illinois in early October.

The bride-to-be is a graduate of the University of Wisconsin. Leyshon was graduated from Ohio State University, where he was a member of Sigma Chi fraternity and Sigma Pi Sigma physics fraternity.

HOSPITAL LIST

The following Y-12 employees were patients at the Oak Ridge Hospital recently: Harry B. Bainbridge, Dept. 2320; Betty Jane Sherman, Dept. 2282; Dell C. Walker, Dept. 2616.



SCENES FROM OAK RIDGE PLAYGROUNDS CIRCUS

The spectacular event staged last Wednesday night at Blankenship Field by the City Recreation Department was attended by about 3,500 enthusiastic people. Y-12 children took leading parts as the two pictures above show. In the top picture are Ringmaster Bobby Barron, and the two Ramsey brothers, Bill and David.

The Y-12 musicians, members of the Municipal Band, are left to right, Roane Roseberry, Al Anderson, R. B. Rosenberry, Sr., Tom Hamrick, and Joyce Olson.



Y-12'S UNDEFEATED REPRESENTATIVES IN THE CITY RECREATION SOFTBALL League. The team, managed by Harold Babb, won the first half title with five wins, no losses, and have posted a clean record of three triumphs in the second stanza. In outside competition, the Y-12ers have a .500 average, winning two while losing the same number. Y-12's chief claim to softball fame is based on a recent record chalked up by pitcher, Ed Size, who hurled the only perfect game ever pitched in Oak Ridge, a no-hit, no-run, none-walked contest. Out in front, are the team's mascots, Billy Size, left, and Ross McGill. Players in the front row are, left to right, Ed Size, pitcher; Bill McGill, 2b; and Roy Hale, catcher. In the back row, left to right, are J. H. Shoemaker, 3b; George McPherson, outfielder; Harold Babb, ss; John Gordon, 1b; Carl Frazier, outfielder, and Tom Webber, outfielder. The mascots, Billy and Ross are sons of players Ed Size and Bill McGill, respectively.

Protest Skipped In Y-12 Defeat

Only a B team in fast company, the Y-12 men's softball team is right in there dishing out plenty of headaches to the city tournament teams. In their first game they defeated the X-10 team, 9-6; and gave the K-25 boys plenty of opposition before bowing 5-1.

The important story behind the K-25 game is not the final score, but the sporting gesture shown by the Y-12 team in foregoing a protest which had been officially recognized and upheld by the softball commissioner. The morning after the game the team met and discussed the protest. After due consideration the team decided that in view of the tight tournament schedule, and the delay caused by a replay of the game, and in the interest of good sportsmanship and promotion of better softball in Oak Ridge, they would forego the protest and let the game enter the records as played.

All members of the Y-12 team are to be congratulated on their sporting attitude. Everyone loves a winner, but the boys lost nothing in respect or glory by their decision. They played a swell ball game and had the breaks gone the other way, could easily have emerged the victors.

In the K-25, Y-12 contest, K-25 had 5 runs, on 5 hits. They had no miscues. Y-12 scored one run on four hits and were guilty of two bobbles. Batteries for Y-12 were Sise and Hale, for K-25, Smith and Burton. Sise had five strike-outs and Smith, eight. Dew, of Y-12, led his team at bat with two for two; Sise and Krouse each had one single. Burton, with two for four, was the leading hitter for K-25.

The game was well-played on both sides and established a tournament record thus far of fifty-three minutes playing time.

City Loop Calls Keglerettes

The women bowlers of the City League will hold their first meeting of the season on Wednesday, August 17, 1949, at 7 p.m. at the Oak Terrace. Immediately following this meeting the Oak Ridge Woman's Bowling Association will meet at 8 p.m. All women bowlers are urged to attend.

Don't leave coils of rope where they can be tripped over in the dark.

Y-12 Lassies Clinch Tennis Championship

With the City League Tennis championship assured by their twin victories of last week, Capt. Helen Burkhalter's Y-12 tennis team looks forward to the trophy which will soon be awarded them. The plant is proud of the girls' record and Dr. C. E. Larson, Plant Superintendent, plans to write a letter of congratulation to each member of the championship team.

The champs won the first half of league play easily and, although losing their star player, City Singles Champion, Joan Gilliam, the girls carried on their winning ways into the second half, winning 28 and losing 8. The girls never lost a team match and were tied only once.

In the matches played last week the Y-12 Champs defeated K-25, 4-2, and the Independents, 5-1.

League Standings Won Lost
RESULTS OF Y-12 - INDEPENDENT MATCH

Rankin over Comar 7-5, 3-6, 7-5.
Patrick over Collie 6-1, 6-2.
Burkhalter over Gilbert 6-4, 6-1.
Lambert and Gwaltney, Independents, defeated Hart and Hale, Y-12.

RESULTS OF Y-12 - K-25 MATCH
Rankin, Y-12, over Stockton, K-25, 6-2, 6-1.
Freestone, Y-12, over Green, K-25, 6-0, 6-4.
Patrick, Y-12, over Wade, K-25, 6-0, 6-0.
Holmes, K-25, over Burkhalter, 2-6, 6-4, 6-4.
Hart and Spivey Y-12, over Jolly and Thaler, K-25, 6-2, 6-2.
Boyd and Little, K-25 over Thompson and Hale, Y-12, 7-5, 6-8, 6-3.

Eight Departments Post Perfect Attendances

The Building and Grounds Department of the Major League not only maintained a first place position in the absenteeism standings but improved its record of 0.7 for the previous week by posting a perfect attendance record for the past week ending August 7.

MAJOR LEAGUE
More than 50 Employees Scheduled
Group absentee percentage was 2.7 per cent, .4 per cent higher than the preceding week.

Dept.	Percentage Absent	Standing 8-7-49	7-31-49
2014	0.0	1	1
2077	0.0	1	10
2360	0.7	2	2
2360	1.0	3	4
2091	1.4	4	5
2003	3.1	5	8
2283	3.5	6	3
2282	3.6	7	7
2015	4.3	8	9
2142	4.4	9	11
2300	4.5	10	12
2616	5.0	11	6

Honesty is giving the loan company appraiser and the assessor the same answers.

Cards Beat Lab In Tight Contest

Paced by the timely hitting of Fred Guttery, the Y-12 Cardinals knocked off the ORNL Nationals, Muny League first half champions, to the tune of 8 to 7 in a well-pitched contest by Elmer Johnson of the Y-12 mound staff. Fred added to his loop-leading in the batting department by getting three safties in five attempts.

The thrilling victory last Thursday night at Gamble Valley Stadium not only dumped ORNL from undisputed possession of the top perch into a first place tie with K-25, but moved the Cardinals up a notch into fourth place and above the Community Stores Colts.

Tonight at 8:15 o'clock the up-and-coming Cardinals take on the Clinton Team at the Gamble Valley Stadium, and a win for Y-12 will put the team into a challenging position for the third place spot now occupied by the Clintonites. A real test faces the Cardinals the night of August 22 when they are scheduled to collide with the cousins from out West Turnpike Way, the K-25 Hubs.

Team									R	H	E		
Y-12	3	0	2	0	0	1	0	1	0	8	8	3	
ORNL	0	0	4	0	0	2	1	0	0	7	16	4	
Batteries: Cardinals, Johnson and Noe;													
ORNL, Tucker and West.													
LEAGUE STANDING													
Team	W				L				Team	W		L	
ORNL	5				2				Y-12	3		5	
K-25	5				2				C. Stores	1		3	
Clinton	4				2				AEC	1		5	

Perfect Attendances

Six Minor League Departments came through with perfect attendance marks in the absenteeism record for the past week, three of them repeating their 0.0 per cent marks of the previous week.

15-49 Employees Scheduled
Group absentee percentage was 2.5 per cent, .6 per cent lower than the preceding week.

The plant average for the week ending August 7, 1949 was 2.8 per cent, .4 per cent higher than the preceding week.

Dept.	Percentage Absent	Standing 8-7-49	7-31-49
2009	0.0	1	1
2107	0.0	1	1
2002	0.0	1	1
2093	0.0	1	2
2133	0.0	1	3
2060	0.0	1	11
2739	0.8	2	1
2143	1.3	3	1
2005	1.5	4	6
2619	3.3	5	7
2008	3.4	6	13
2140	3.75	7	12
2001	3.75	7	10
2743	4.4	8	8
2200	5.6	9	9
2109	5.7	10	4
2090	5.9	11	5
2270	6.3	12	15
2096	7.1	13	14

Bums Cling To One-Game Lead In Y-12 Plant Softball League

Manager Jess Hamon's Bums find themselves clinging to a slightly precarious lead of a mere one game advantage as they continue their front-running down the home stretch. After taking a nip and tuck affair with the second spot positioned Rippers last Friday night by a score of 9-8, the Bums went into complete reverse against this same team last Wednesday night when the Rippers virtually ripped the loop leaders apart with a searing deluge of 22 hits for 18 runs while allowing the Bums a mere trio of runs on six hits.

For five full innings last Monday night, it appeared that the lowly, cellar-dwelling Isotopes would also play the role of giant-killers as they held the Bums scoreless up until the sixth when they blew up and allowed the Bums to tally five times with the aid of Isotopic errors. The final score was, Bums 5, Isotopes 0. Twin wins by the surging All-Americans during the past week's play enabled the team to move up into third place in the second half standing of the Y-12 Softball League.

Whether or not the All-American surge is just a flash in the pan will be determined next Wednesday night when they take on the loop-leading Bums. The same evening the Rippers meet the fourth place All-Stars, and the outcome of these two games will probably go a long ways towards settling the second half title.

The Schedule Ahead
Wednesday, August 17

5:45, All-Stars vs Bums; 7:15, Bldg. 9212 vs Isotopes; and at 8:45, All-Stars vs Rippers.

Monday, August 22

5:45, Isotopes vs All-Stars; 7:15, All-Americans vs Rippers; at 8:15, Bldg. 9212 vs Bums.

Note: Provided all the scheduled games are played the post-season double elimination tournament will get underway September 29.

Results Thru August 10

Team	R	H	E
Rippers	1	1	2
Bums	2	2	0
Batteries: Bums, Walton and Hale; Rippers, Gordon and Lowery.			

Team	R	H	E
Bums	0	0	0
Isotopes	0	0	0
Batteries: Bums, Walton and Brown; Isotopes, Darby, Killian and Capehart.			

Team	R	H	E
Rippers	1	0	2
Bldg. 9212	1	0	0
Batteries: Rippers, Gordon and Lowery; Bldg. 9212, Mustin and Moses.			

Team	R	H	E
All-Americans	0	0	3
All-Stars	0	0	1
Batteries: All-Americans, Sise and Morrow; All-Stars, Ross and Boatman.			

Team	R	H	E
Rippers	4	5	2
Bums	0	1	1
Batteries: Rippers, Noe and Lowery; Bums, Waltons, Francis and Brown.			

Team	R	H	E
All-Americans	4	5	0
Isotopes	0	1	0
Batteries: All-Americans, Ross and Boatman; Isotopes, Killian, Love and Capehart.			

Team	R	H	E
All-Stars	4	0	0
Bldg. 9212	4	0	1
Batteries: All-Stars, Tilson and Twitcheil; Bldg. 9212, Mustin and Barker.			

Team	W	L
Bums	7	1
Rippers	6	2
All-Americans	5	3
All-Stars	4	4
Bldg. 9212	3	5
Isotopes	2	6

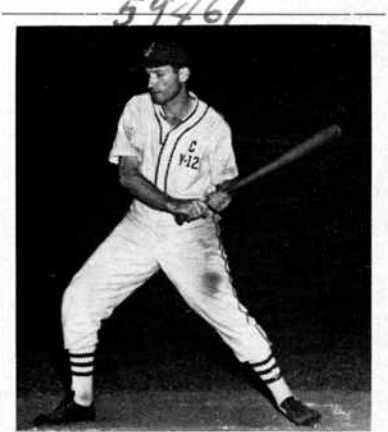
Softball Sockers Outlast Lab Team

Ed Sise, Y-12's softie hurler of no-hit, no-run fame, relinquished mound duties to Stover against the ORNL Security aggregation and, playing in the field, sparked his team to a 6-4 win which kept the Y-12 entry in the Oak Ridge District softball tournament. With the Y-12ers trailing, 2 to 3, for the first four innings, Sise doubled in the top half of the fifth which scored two teammates and iced the game. The game was played last Thursday night, and the next evening Y-12 met the K-25 team in lower bracket play of the double elimination tournament Y-12 got nine hits; these, incidentally, were distributed equally among all nine players.

Team	R	H	E
Y-12	0	2	0
Security	0	1	2
Batteries: Y-12, Stover and Hale; Security, Shields and Hicks.			

Y-12 HORSEMAN COMPETES

Hoyt Adkins, of Y-12, has entered his Tennessee walking horse, Silver Chief Allen, in the Oak Ridge Horse show which will be staged at Oakwood Park the nights of August 18-19. The Adkins horse is a beautiful white stallion and classy ring performer.



FRED, GUTTERY, CARDINAL First Baseman and Muny League batting champion.

Guttery's Big Bat PacesMunyLoop

Ball-slugging Fred Guttery, Cardinal first baseman, who won the first half batting championship of the Muny Baseball League with an average of .479, continues his hitting stride and is well out in front for the second half crown with a present average of .471.

Guttery, who is now doing a great diamond hitting job for Carbide and Carbon at Y-12, was born at Carbon Hill, Ala., where he first began to play organized baseball with a Junior American Legion team. From his hometown, Fred went to Birmingham, Ala., and played on a team which competed in the national amateur baseball championship tournament at Battle Creek, Mich.

Well on his way to a professional baseball career until the war came along, Guttery entered service with the air corps where he continued playing baseball. He played on the air forces' all-star team which competed for the championship of the U. S. Army's occupation forces in Germany. In the finals, Fred's team was defeated by the Third Army All-Stars when Ewell Blackwell, major league pitcher, hurled two no-hit, no-run games.

In November, 1945, Guttery came to Oak Ridge and went to work at Y-12. Last year he played with the V.F.W. Club and shared the muny league batting championship with Jesse Payne, a former Y-12 employee, who worked at the Laboratory that year. Fred is married, has three children, and he and Mrs. Guttery live at 213 Jonathan Place.

A Banner Bowling Season

It looks like another banner year for bowling coming up if the results of last week's meetings are any indication. At the meeting for the men's teams "B" and "D" Leagues were fully organized and the "C" loop has five teams ready to needed for the "C" League; and therefore, all unpledged bowlers are requested to get together, form teams, and help fill out the "C" League.

The first meeting for the Women's League fell short of expectations as only three girls attended the called confab. But it is believed that more interest can be developed with a little urging here and there, for it is hoped that a girls' plant league of eight teams can be formed. A second meeting was held last Friday for the Y-12 keglerettes.

The Y-12 men and women's varsity teams will meet again at Oak Terrace in a practice session set for 8 o'clock, Thursday, when a mixed match will take place.

HOSPITALS KEPT BUSY

The Metropolitan Life Insurance Co. reports that each day 43,000 persons are admitted to hospitals in the United States. This is one every two seconds.

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M.I.T. Students Record Oak Ridge Activities

Editor's Note: This is the second and concluding series of excerpts taken from a brochure prepared by R. F. Badgour, Assistant Director, Massachusetts Institute of Technology, Engineering Practice School.

According to the late Prof. W. H. Walker, it is a truism to say that it is easier to acquire a knowledge of science than it is to apply intelligently and successfully this knowledge to the solution of technical problems. In recognition of this fact, the primary objective of the Practice School is to develop the student's ability to apply fundamentals by assigning him to a variety of challenging plant problems. Also, the confidence engendered by responsible execution of industrial problems from the point of inception to final completion and presentation of the results is a material aid in developing professional competence and maturity.

The request for a test or investigation frequently originates directly with the plant supervisors, and the assignments are always chosen with the concurrence and approval of the superintendent whose division is most interested in the results to be obtained. This problem selection is usually accomplished by a conference of the staff and the plant men. The assignment is then presented to a section of the student group in the form of a memorandum outlining the general problem and specific information desired. The size of the section and the time allotted vary depending on the magnitude and scope of the assignment. They may range, for example, from two men on a limited research problem for one week to ten men on a comprehensive plant test for a month.

In no case is a man assigned to a problem alone, for cooperative effort is one of the factors stressed in Practice School work. In sections of three or more men, a group leader is appointed who is responsible for portioning and co-ordinating the work and seeing that the assignment is completed on schedule. The responsibility of being group leader for an assignment is alternated among the men.

The first step in the solution of the problem is to become acquainted with the operations and equipment involved. Then must be determined the phase of the operation to which the investigation will be confined. This may be accomplished by conferring with the plant men for their ideas and by consulting the literature, including plant reports, to determine what information is already available. Once the specific problem has been defined, it may be analyzed to determine the experimental data needed, the test equipment required, the results expected, and the manner in which they will be presented.

The group then present their plan of attack to the staff for approval. The procedure is subsequently discussed in a conference with the men. The staff make criticisms and suggestions, but as far as possible the final decisions on the procedure are left to the students. When a procedure is outlined which is acceptable to both the students and the staff it is taken



MEMBERS THIRD GROUP OF M.I.T. ENGINEERING Practice School students—They are here for 22 weeks of work training on research and development projects at Y-12, ORNL, and K-25. The M.I.T. Practice School students are, left to right, front row, Charles M. Walker, of Short Hills, N. J.; William J. Larkin, Assistant Director of the School; and Benjamin J. Brettler, of New York City. In the back row are Lee D. Carr, Brookline, Mass.; Louis Baselm, New Haven, Conn.; and Francis J. Zimmermann, also of New Haven.

for his approval to the plant supervisor in whose division the work will be done.

Following this the necessary experimental equipment is built and the actual test is performed. The assignment is completed when all calculations have been completed and the results and conclusions have been properly presented in a written account on the scheduled date.

The assignments performed by the students are essentially original investigations of a development and plant test nature. Some of them involve basic engineering which may be followed up by practical application in the industry. Other problems are of immediate plant interest. Such tests are not routine but are directed toward developing some improvement in plant operation. The students never operate full-scale plant equipment except under the supervision of the regular operator. Investigations of plant equipment are arranged in such a way that production is not impaired while the test work is being performed.

Personal Competence

One of the unique features of the Practice School training is that it gives the student an opportunity to develop not only his technical aptitude but also the desirable personal traits which are so necessary in industrial work. As an aid in this development the men are rated at the end of each of three seven week sessions in the program on the following personal characteristics: personality, intellectual ability, judgment and common sense, industry, sense of responsibility, initiative, self reliance, cooperation, and leadership.

The men are rated independently by the staff and by each of the other Practice School men on the basis of their evaluation of his work in the period just ended. Since the ratings may not give the complete picture of a man, they are accompanied by any additional comments necessary to describe the overall impression which he has made.

As mentioned previously, all activities in the Practice School are group efforts. It is mainly upon his

actions in these close-working groups that the man is evaluated. In ranking a man in the group, an attempt is made to duplicate the case of an employer considering the man for possible employment or for increased responsibility. It is mainly upon this ranking that his grade is based.

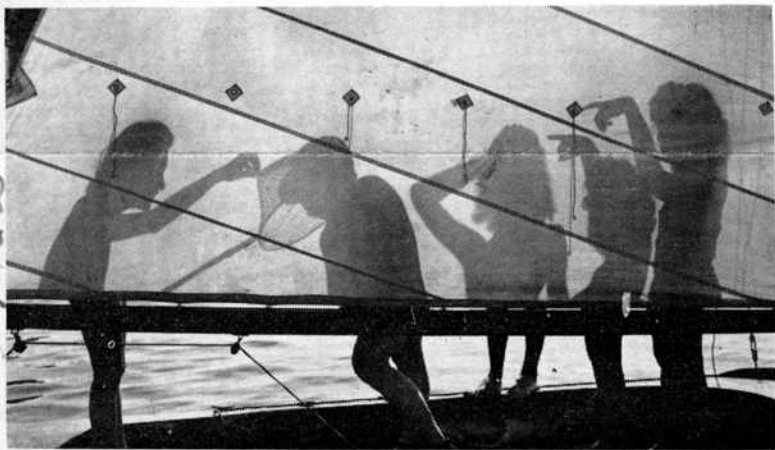
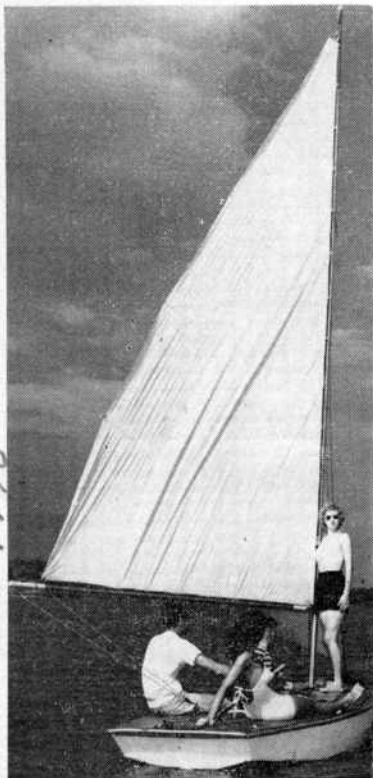
A summary of the results of the group and staff ratings is given to each man in a private conference with the director. At the conference he is also told what the staff thinks of him and what his fellow workers think of him, with constructive criticisms and suggestions for improvement. Some very gratifying improvements in personal effectiveness have been achieved by these ratings and conferences and the system is considered one of the outstanding features of the Practice School program.

Effective Communications

Engineering to a great extent is a group undertaking, and achievement may hinge strongly on effective communication among the men in the group. The results of a technical investigation have little utility unless they can be understood and used by others. Thus it is of prime importance for an engineer to develop the ability to present technical reports with clarity, conciseness, and forcefulness. From the engineer's personal point of view, other people must often form an opinion of him based on the quality of his presentations. Just as he can command respect from his readers with a well-designed written report, even more can he impress an audience with a good talk, for he has considerably more opportunity to use the forcefulness of his personality in transmitting ideas.

The men also get realistic experience in oral reporting at the periodic sessions of five-minute talks on investigations they have made in the plant, presented for the benefit of the plant men. An important part of these talks is the question periods which follow, for they test the speakers grasp of his subject and his ability to think on his feet and give a direct and adequate reply to a specific question.

THE GIRLS CAUGHT A MERMAN—Revelation of what they were fishing for and caught was promised in last week's issue of The Bulletin. Although the pix at the bottom is only partially revealing, it has been ascertained on impeccable authority that the merman caught was Gus Angele, owner of the sailboat. Also ascertained was the names of the Y-12 girls in the silhouette scene. They are, left to right, Audrey Braden, handling the snare, Rella Murr, Nina Lowry, and Lucy Townsend. Picture to the left shows another Y-12er's sailboat borne by the Lake Loudoun breeze on a recent Saturday's outing and carrying a beauty bevy-cargo. George Lockhart, owner of the sailboat is shown at the left, and the boy, second figure in the picture, is his son, Buck Lockhart. The girls are, left, Rella Murr, and Chris Sparkman.



'Unloaded Guns' Are Inexcusable

"I didn't know it was loaded," is a poor excuse for a shooting accident. It would never be heard if everyone would always practice the first rule of firearm safety—which is to assume that every firearm is loaded until the contrary has definitely been established. Don't ever point a firearm at anyone you don't want to kill.

Customer: "One mouse trap, please, in a hurry—I have to catch a bus."

Clerk: "Sorry, our traps don't come that big."

Y-12 Chessmen Lose Match

Y-12 chessmen were blanked in the sixth match of the City Chess League staged August 8. Y-12ers D. J. Crouse, D. G. Hill, D. F. Musser, R. D. Smith, and J. D. Redman lost respectfully and respectively to Ruley, Smith, Blasi, Jackson and Maynard, of the Independents. Results of other matches: ORNL "A" (3), K-25 (2); Fairchild (3), ORNL "B" (2).

LEAGUE STANDINGS (Thru Aug. 8)

Team	W	L
ORNL	18.5	11.5
Fairchild	18.0	12.0
Independents	18.0	12.0
ORNL "A"	15.5	14.5
K-25	12.0	18.0
Y-12	8.0	22.0



GIRL FIRST AID TEAMS AT Y-12 PREPARING FOR CARBIDE CONTEST which will be staged at Blankenship Field the night of September 17—In the above picture to the left are members of the Chemistry Research Division's women first aid team. They are, left to right, Jeanne Rogers, Virginia Bowers, Thelma Grose-close, Roberta McCutchen, Virginia Spivey, Mary Barnes. Not present when the picture was taken was Shirley Brown. Members of the Chemistry Division team are

shown in the picture to the right. They are, left to right, Earline Banic, Daisy Ward, Genevieve Bryant, Debora Hubb, Eunice Jones, Anna Roberson, and Thelma Cole. It seems assured now that Y-12 will be represented by 12 teams in the annual September Carbide First Aid Contest. Four of these are women's teams. Last season a girls team composed of plant-wide selection captured top honors of all the teams competing.